DEPARTMENT OF COMMERCE
BUREAU OF FOREIGN AND DOMESTIC COMMERCE
JULIUS KLEIN, Director

MISCELLANEOUS SERIES—No. 108

VEGETABLE OILS AND OIL MATERIALS IN INTERNATIONAL COMMERCE

PRICE, 5 CENTS

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Monograph

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LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE,
BUREAU OF FOREIGN AND DOMESTIC COMMERCE,
Washington, January 31, 1922.

SIR: There is submitted herewith a report on the vegetable oils and oil materials in international commerce, prepared in the Division of Research by O. W. Barrett and John A. Dunaway, assisted by Miss A. Hazel Swift. The statistical tables accompanying the report show imports and exports of those oils and materials for a pre-war year, 1913, and for the post-war years 1919 and 1920. Statistics for 1921 are not included, since they are available for very few of the countries involved in this trade. In view of the growing importance of vegetable oils for food and technical uses, it is thought that this report will be of interest to a large number of American business men.

Respectfully,

JULIUS KLEIN,
Director.

To Hon. HERBERT HOOVER,
Secretary of Commerce.

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VEGETABLE OILS AND OIL MATERIALS IN INTERNATIONAL COMMERCE.

INTRODUCTION.

There has been a falling off in the world trade in vegetable oils and oil materials since 1913. The trade in 1920 was approximately 12 per cent less than in 1919, while in 1919 it was about 8 per cent less than in 1913.[1] From a consideration of the known factors of the trade, however, this decrease appears to be a part of the general world commercial depression rather than a permanent setback.

The accompanying tables have been compiled to show the volume of imports and exports of vegetable oils and oil materials of the principal producing and consuming countries for 1913, 1919, and 1920. By comparison of 1913 (the latest year unaffected by the war) with 1919 and 1920, an indication of the pre-war distribution and importance of the trade is secured and certain of the post-war trends are shown. While these latter trends may not be considered normal, it may be useful to note them in this period of trade readjustments.

It should be borne in mind that these tables are not complete, in that they do not take account of the export of vegetable oils in other products. A country may produce or import a great amount of oil material, the oil from which is exported in soap, margarine, or other products, and not as oil. Values are omitted in the tables since abnormal exchange conditions make value comparisons almost useless.

COUNTRIES PRODUCING AND EXPORTING OILS.

While vegetable oils are produced in nearly all parts of the world, and enter largely into foreign trade, in many countries the whole product is consumed at home. Other countries, which have large exports, have correspondingly large imports. Spain is the only European country which, at the present time, produces a surplus of oil. The other countries of the world, which had net exports of oil in 1919, were from the same general region in Asia, as the following table shows:

	Short tons.
China	301,000
Philippine Islands	153,000
Spain	124,000
Dutch East Indies	84,000
Ceylon	37,000
British India	30,000
Japan	25,000

While the increase in net oil exports of some of the principal producing countries from 1913 to 1919 indicates the extent to which crushing mills are being established in the producing countries and

[1] Combining totals for oil and oil materials on the basis of 1 pound of oil equals 3 pounds of materials.

the surplus production exported as oil, it is nevertheless true that the greater part of the vegetable oil of the world enters foreign trade as oil material. A great saving in transportation costs would result if all the oil were crushed in the producing countries, and this saving may in time overcome the factors which tend to keep the oil materials afloat. In discussing the factors which are tending to keep copra afloat, Commerce Reports (issue of Nov. 7, 1921) says:

> One of the important developments in the copra trade during the last five years is the establishment of a great many copra-crushing mills in the Pacific countries, especially in the Philippines, Dutch East Indies, Australia, the Straits Settlements, and French Oceania. Crushing the oil where produced not only saves freight charges but prevents a great amount of spoilage of copra in storage and shipment. It likewise results in a better grade of oil.
>
> In most of the Pacific countries suitable containers for the oil are scarce. Steel drums are expensive, especially in Pacific countries, because of heavy transportation charges, and, moreover, are short lived. Wooden barrels are unsatisfactory. Second-hand kerosene tins are fairly cheap in some localities, but they rust quickly, resulting in great leakage of oil. Transportation in tank steamers would be more efficient, but tankers which have been used in the petroleum trade can not well be used for edible oil and the tankers can not well afford to make the return voyage in ballast.
>
> When the copra arrives at the mill in the Pacific there may be no containers available for the extracted oil and the mill may therefore refuse the decaying copra except at a fraction of its normal price. Much copra is forced into longer journeys to Europe because of this shortage of oil containers, and this has caused great losses to the industry in lowered prices, spoilage in transit, and low-grade oil made from partially decayed copra.
>
> One other factor has contributed toward keeping copra afloat in the Pacific, moving toward Europe and America and away from the local crushing mills, namely, the strong demand in Europe for "poonac," as the copra cake is called after the oil has been removed. Poonac is of little or no value in the Pacific countries; therefore the saying, "Poonac pays the freight," has a real significance. It seems likely, therefore, that copra will continue to be an important export commodity even in those countries supplied with crushing mills ample to handle the entire local production. The almost utter absence of oil mills in Polynesia and in the great copra-producing countries of the western Pacific forces nearly the entire production, estimated at 125,000 tons, into bottoms plying between Sydney, San Francisco, Japan, and Singapore. In April of the current year all but one of the "Insulinde" mills in the Dutch East Indies were idle, and many of the fine new plants in the Philippines were in serious straits with heavy cargoes of copra moving away from their doors.
>
> In Europe poonac has for 15 years been highly esteemed as a concentrated feed for dairy cattle. In fact, some experiments in England have indicated that poonac actually stimulates milk secretion, besides supplying the fatty elements of the fluid itself. Two tons of copra, worth about £64 at the mill in England, would yield a little over 1 ton of coconut oil worth about £53 and nearly 1 ton of cake worth about £15, a profit at the plant of nearly or quite £5 on the 2 tons, due in good part to the value of the poonac, which is nearly one-half the value of the copra ton for ton.

China.—China leads the world in net exports of vegetable oils. Its leadership rests principally upon the great soya-bean crop of Manchuria. While China's oil exports have more than doubled since 1913, there has been little increase in its exports of oil materials.

Spain.—Spain is important for its production of oil materials. Its surplus is exported largely in the form of oil. Spain imports some raw materials, but these imports are unimportant in comparison to its oil exports. Enormous quantities of oil are consumed in Spain, the yearly per capita consumption of olive oil alone being estimated at 25 pounds. The exports of oil from Spain increased from 66,632,000 pounds in 1913 to 252,057,000 pounds in 1919. In the same period Spanish imports of oil materials decreased from 156,192,000 to 54,474,000 pounds. There was a decided falling off in oil exports in 1920 over 1919, due apparently to the general commercial depression rather than to failure in the supply.

Dutch East Indies.—The downward trend of the trade of the Dutch East Indies in both vegetable oils and oil materials in 1920 is evident from these tables, although figures are available for Java and Madura only. The exports of vegetable oils fell off considerably in the latter half of 1920 along with the great slump in the general foreign trade. The increase in oil exports in 1919 over 1913 was made possible by the establishment of crushing mills in the islands, and these mills are capable of handling a much greater proportion of the locally produced oil materials.

Philippine Islands.—The great increase in oil exports of the Philippine Islands from 11,046,000 pounds in 1913 to 308,823,000 pounds in 1919, indicates the growth of the oil-mill industry, as well as an increase in production of oil materials, since the decrease in exports of oil materials did not offset the increase in oil exports. The general depression of 1920 was reflected in the oil exports of the Philippine Islands, and the volume was but little more than half that of 1919.

Ceylon.—In comparison to its size, Ceylon is the greatest oil and oil-material producing country. To the figures as given in Table I should be added the amounts of desiccated coconut exported—35,000 tons in 1919 and 29,000 tons in 1920. Ceylon also consumes large quantities of oil stuffs locally. It is estimated that 500,000,000 cocoanuts are eaten in the fresh state annually in Ceylon.

COUNTRIES PRODUCING AND EXPORTING OIL MATERIALS.

Many of the countries producing oil stuffs are not equipped with crushing and refining mills; hence they must export their surplus in the form of the raw materials. (See Table II.) It should be noted that while the total exports from this group of countries decreased from 8,647,000,000 pounds in 1913 to 6,819,000,000 pounds in 1919, and to 4,707,000,000 pounds in 1920, this was partly offset by increased exports of oil from certain of the countries in 1919, as compared with 1913. The decrease in 1920 was most marked in three countries—British India, Argentina, and the Dutch East Indies.

In 1919 Argentina led the world in net exports of oil stuffs, due principally to its vast flaxseed production, but dropped back to second place in 1920. British India, first in 1913, retained first place in 1920, although in the latter year its exports were less than half those of 1913. In both 1919 and 1920 China ranked third in gross exports of oil materials. Egypt dropped from third place in 1913 to fourth in 1920. This decrease was not offset by oil exports, since they had also decreased by some 25 per cent. The place held by the Dutch East Indies was close to that of China in 1919, but the incomplete figures indicate that the difference was greater in 1920. The fall in Philippine exports from 184,140,538 pounds in 1913 to 57,919,456 pounds in 1920 was more than compensated for by an increase in exports of oil.

Brazil is one of the few countries which had a larger gross export of oil materials in 1920 than in 1913. Brazilian production is capable of great expansion, due to its available land and its great variety of oil plants, such as kernel-bearing palms, African oil palms, the Batiputa berry, and cotton seed.

The figures for the Straits Settlements and the Malay States need explanation. They are obtained mostly from the returns of the Straits Settlements, and the "imports," therefore, refer largely to

materials shipped from the Federated and Non-Federated Malay States to Singapore for export. The import figures therefore may largely be disregarded, and the export figures may be considered as applying to exports from all of the Malay States.

While data are unavailable for production of oil and oil materials in Russia, Belgian Kongo, Indo-China, and Turkestan, it is well known that these regions are great producers of oil materials and that production can be greatly increased.

CONSUMING COUNTRIES.

It is evident from the tables that the flow of world trade in vegetable oils and materials is mainly from the tropical and semitropical agricultural lands of Asia and South America toward the industrial lands of the North Temperate Zone. It is also to be noted that, although the imports of the United States are large and have greatly increased since 1913, the bulk of this trade is with Europe.

Germany.—In 1913 Germany led the world in the importation of oil materials (3,852,000,000 pounds), exceeding the United Kingdom by 290,000,000 pounds, but in 1920 it took fifth place, with an importation of 727,258,000 pounds, which was less than half that of France. The decline in German imports accounts for three-fourths of the decrease in the 1920 exports of oil materials from the principal producing countries, as compared with the exports in 1913. (See Table II.) During this period German oil imports more than doubled, while exports of both oils and materials almost disappeared. In 1920 German net imports of oils and materials (estimating 3 pounds of materials as being equal to 1 pound of oil) were less than half those of 1913.

United Kingdom.—The United Kingdom imported larger amounts of oil materials in 1919 and 1920 than any other country. Its oil-seed crushing industry is the largest in the world. It also leads the world in excess of imports of oil and oil materials over exports. There was less change in the trade of the United Kingdom in these materials between 1913, 1919, and 1920 than in that of any other country covered by these tables. The United Kingdom's net imports of oil materials in 1920 were over 3,000,000,000 pounds—equal to those of France, Germany, the Netherlands, and Denmark, and 74 per cent in excess of those of the United States.

United States.—In 1913 the United States was surpassed by the United Kingdom, not only in the oil-materials trade, but also in the imports and exports of vegetable oils. In 1919 and 1920, however, the oil imports and exports of the United States exceeded those of the United Kingdom, while the oil materials had increased from about one-seventh that of the United Kingdom in 1913 to nearly three-fifths in 1920. Moreover, the tables do not indicate the great quantity of vegetable oils exported from the United States in the form of soap, margarine, and similar products. In estimating the importance of trade in vegetable oils and materials, it should be noted that the value of the imports of oil into the United States in 1920 equaled approximately the value of imports of oil materials, the combined value ($208,800,000) was slightly less than imports of rubber ($242,000,000) and hides and skins ($243,000,000), which were exceeded in value only by imports of coffee, silk, and sugar.

Netherlands.—The imports of oil into the Netherlands in 1920 were approximately equal to the exports. The imports of oil materials

were about 550,000,000 pounds greater than exports, which, compared with figures for 1913, indicate a considerable decrease in the amount available for consumption, for in 1913 the imports exceeded the exports by 54,286,000 pounds of oil and 805,078,000 pounds of oil materials. It is also to be noted that there was a considerable decrease in the amount of oil materials crushed in the Netherlands in 1920 as compared with 1913.

Belgium.—In 1913, and again in 1920, the oil imports and exports of Belgium were approximately equal, although the exports in 1920 were but slightly more than half those of 1913. The imports of oil materials into Belgium decreased from over 800,000,000 pounds in 1913 to slightly more than 60,000,000 pounds in 1920, while exports of materials fell from 484,000,000 to 12,000,000 pounds, indicating a decrease in consumption and in oil-mill output.

France.—The net imports of oil materials into France decreased from 2,205,000,000 pounds in 1913 to 1,432,000,000 pounds in 1920. This decrease was offset only in part by the increased surplus of oil imports over exports in 1920, as compared with 1913, amounting to 168,000,000 pounds.

Italy.—Net imports of oil and oil materials into Italy increased in 1920, as compared with 1913, indicating a greater dependence upon imported oil.

Denmark.—In 1920 Denmark was the only European country except Spain which had a large favorable balance in its oil trade, the Danish exports being 2.7 times the imports. While the oil exports of Denmark were twice as large in 1920 as in 1913, when its increased imports of raw materials are considered, it is evident that Danish home consumption likewise increased by some 10,000,000 or 12,000,000 pounds of oil. It is also evident that Denmark has greatly increased its oil-crushing business.

Japan.—While Japan exports more oil than it imports, Japanese oil exports are obtained largely from imported oil seeds and materials, and Japan is in reality an importing rather than a producing country. Its exports of oil have kept pace with its greatly increased importation of oil stuffs, which were considerably larger in 1920 than in 1913.

LEADING VEGETABLE OILS AND OIL MATERIALS.

Table III indicates the general current of trade in the chief vegetable oils and oil materials. Export and import classifications differ widely among the official reports of the various countries, and in some cases important commodities are not separately enumerated. For instance, the French reports include palm-kernel oil, tangkawang tallow, and touloucouna (Caropa) butter under one set of figures, and the reports of the United Kingdom do not separate palm oil (tallow) from palm-kernel oil. There is further difficulty in tracing many of the major commodities from the country of origin through the country of manufacture to the country of consumption. For instance, sesame seed exported from British India to the United Kingdom may appear in part as sesame oil in the domestic exports of the latter country. Some of this may reappear as an import of "salad oil," or "all other" oil, into some country such as the Union of South Africa; or it may disappear entirely as an export oil from the country importing the raw material because of local consumption or as an ingredient in exported margarine.

PALM OIL AND PALM KERNELS.

Changes in the movement of certain commodities, due probably to the effects of the war, should be noted. For example, in 1913 330,000 tons of palm kernels left West Africa for Europe, and it is estimated that over 80 per cent of this amount went into the great Hamburg crushing plants. In 1920 only 30,000 tons went to Germany, while the United Kingdom took 320,000 out of the total of 420,000 tons imported by European countries. Notwithstanding the importance of this commodity, the annual trade in which amounts to nearly 500,000 tons, there is to-day comparatively little interest in or knowledge of the plant species which produces not only this large amount of kernels but also 125,000 tons of palm oil. Both are products of the same tree, yet differ from one another as much as cacao butter differs from coconut oil. A large part of the raw material produced by this palm is now wasted, but recently it has been recognized in the Malaya region as a great oil crop, and the Far East may more or less capture the palm-oil industry, as it did the rubber industry. The new mills in West Africa are expected to deliver palm oil suitable for margarines at about three-fourths the price of coconut oil. It will be noted that the domestic production of palm oil is already nearly five-sevenths that of coconut oil, and the production of palm-kernel oil from West African kernels exported is even greater, being about five-sixths of the total reported amount of coconut oil produced in the coconut countries.

In considering the important factors affecting the future status of palm and other cheap vegetable oils, it should be noted that these vegetable oils take little from the soil and can be produced in much larger quantities. Recent improvements in the methods of production and use increase their importance in the event of the long-threatened shortage in the petroleum supply.

COCONUT OIL AND COPRA.

As shown in the tables, 32 countries are concerned in the coconut trade. Some of them, although well adapted to coconut culture, import large quantities of coconut oil. Siam, for instance, imports yearly from 1,000 to 2,000 tons of coconut oil, and exports but little copra (58 tons in 1920).

Of the 26 countries exporting copra, the Dutch East Indies led in 1919, and the complete returns will probably show the same condition in 1920. In copra production (including the copra from which coconut oil is pressed, at 55 per cent extraction) the positions of the various producing countries were approximately as follows: Dutch East Indies, 500,000 tons; Philippine Islands, 350,000 tons; Ceylon, 170,000 tons; Straits Settlements and Malay States, 145,000 tons.

According to the available data at hand, the copra-producing countries of the world exported only about 315,000 tons in 1920, while the consuming and manufacturing countries imported about twice that amount. This may be explained in part by stocks exported toward the end of 1919, which are recorded as exports of 1919 but imports of 1920, especially since the recorded exports of 1919 were about equal to the imports of 1920. However, the imports of 1919 were 225,000 tons in excess of recorded exports. It seems probable, therefore, that much copra is shipped without being recorded in the export statistics of the producing countries.

The Netherlands, France, and Denmark consumed more copra in 1920 than in 1919, while the reverse is true of the United Kingdom and the United States. Denmark's imports in 1920 were nearly double those of 1913—a remarkable gain under the circumstances, and an indication of the state of the Danish industries.

The whole subject of coconut oil is fraught with many complexities. The production in the coconut-growing countries is reported to be about 390,000,000 pounds. Allowing for the few crushing plants in the Pacific Archipelagoes, we have a grand total of 200,000 tons of coconut oil expressed locally, as against some 50,000 tons in 1913. Since it required nearly 400,000 tons of copra to obtain this local oil production of 200,000 tons, the total copra handled in both ways in 1920 was well over 1,000,000 tons—perhaps 1,200,000 tons, including the 30,000 tons of dessicated coconut. This accounts for about 6,000,000,000 of the world's estimated crop of 8,000,000,000 coconuts, which is a more nearly complete utilization of the coconut crop than of the African oil palm.

COTTON SEED AND COTTONSEED OIL.

Cotton seed is perhaps better known and better handled than any other oil seed. Yet there is much to learn regarding the local consumption of the 11,000,000 or 12,000,000 tons, only about half of which is produced in this country. Of the 1913–14 crop, it is estimated that British India produced 2,120,000 tons, or 38 per cent as much as the United States, while China's estimated production was 1,600,000 tons, or 29 per cent of ours. The tremendous domestic consumption of over 1,750,000 tons of cotton seed in India in 1913 was made possible by improvements in extraction and refining methods, which have greatly extended local utilization. Cotton seed has been substituted for coconuts to some extent since the price of the latter has increased. It is estimated that India consumed 225,000 tons of cottonseed cake in 1913–14 and still had 284,000 tons for export.

During the war Brazil and China began exporting cottonseed oil. The presses in Peru and Brazil will naturally find a good market for their surplus oil in the neighboring countries. The cake, too, will help the live-stock industry, especially in Brazil.

With Egypt's export of approximately 250,000 tons of cotton seed, the oil export (1,500 tons) seems surprisingly low. The lack of local demand for the cake partly accounts for this.

PEANUTS AND PEANUT OIL.

Some 560,000 tons of peanuts were imported into the manufacturing countries in 1920, the greater portion of which was "shelled nuts." France took 540,000 short tons in 1913 and 430,000 tons in 1920. The oil output is about 30 per cent of the weight of the nuts, but the surplus oil exported from France in 1920 was less than 15,000 tons, which indicates a monthly consumption of over 10,000 tons.

The world's normal full export crop of peanuts is apparently about 800,000 tons. Of this, India supplies about three-eighths, China nearly one-eighth, and the West African colonies nearly one-half. Both China and India have a large domestic consumption.

Peanut meal and cake always find a ready sale in Europe, while enormous quantities of the oil are absorbed by the margarine indus-

try. In 1916 the Netherlands produced 165,000 metric tons of margarine and in 1920 exported 93,000 tons, a large proportion of which probably was peanut oil.

With the oil imports converted into nuts (about 150,000 tons), the visible supply of peanuts in the commercial currents of the world seems to be over 700,000 tons, or about 60 per cent more than the exported cotton seed of the world. The peanut crop may be greatly increased within a few years.

LINSEED OIL.

In 1913 the manufacturing countries imported about 2,500,000 tons of flaxseed, nearly all of which was exported from Argentina, Canada, and India. In the first half of 1920 Argentina exported 650,000 tons of this raw material and in the first 10 months of 1921 the figure is reported to be 1,100,000 tons, which, however, is only about the same as the 1913 output.

With Russia practically out of the trade, the export production of flaxseed is practically limited to three countries, and likewise the net export of the oil is confined to the United Kingdom (over 50,000 tons in 1920), the Netherlands (some 28,000 tons), and Belgium (6,000 tons). Even British India, with a 1920 net export of 210,000 tons of flaxseed (or more than double that in 1913), sends out practically the same small amount of the oil which is brought in.

The pronounced discrepancy between the seed import figures and the oil export figures evidences the large domestic consumption in the countries of manufacture. Of the total flaxseed imports into the United States (some 680,000 tons in 1920), about 90 per cent came from Argentina. Of the total import value of $74,622,584 that country's share was $68,954,596.

RUBBER-SEED OIL.

For the past eight years the world has expected that at any moment, so to speak, the rubber-producing countries might release a flood of rubber-seed oil. However, aside from small lots of seed exported from Ceylon (28 tons in 1913 and 10 tons in 1920) and a moderate amount of interest in Sumatra and the Federated Malay States, the large exports of rubber seed have not materialized.

Calculating the yield of rubber seed at 350 pounds per acre, the 3,000,000 acres at Hevea would yield 1,000,000,000 pounds of seed, or about 150,000 tons of oil crushed in the rubber factories on the plantations. The seed stores well and tests indicate that the seed cake may become valuable as a cattle feed.

RAPESEED OIL.

The normal production of rapeseed in India is estimated at 1,200,000 tons, but about 80 per cent of this amount is used in the local industries. Accurate statistics regarding the heavy local consumption in European countries would be of much interest.

Quite naturally some confusion exists in the commercial world as to the difference between the rapes and colzas, and the colzas and mustards. Even the botanical nomenclature is somewhat too elastic for the 20 or more closely related plants which bear oil-yielding seeds. These plants, being short-season crops, can be grown in practically every country in the world, and in the warmer climates

two or three crops may be raised annually. With the recent improvements in "clarification," it may well be that much greater quantities of these oils will come into the trade.

SESAME.

Except for certain difficulties in culture and harvesting, the teel, or gingelly, is an ideal oil seed. Fully one-half the weight of the dry seed is oil, and this oil is so pure and clear that it needs little or no refining. In fact, a very large amount of the seed itself is used for food in Asia, Africa, and tropical America.

The table shows that China and India together exported over 250,000 tons of seed in 1913, about one-half of which went to Germany for the margarine and food-oil trade.

OLIVE OIL.

Spain leads the world in the production of olive oil. In 1919 the Spanish exports totaled approximately 250,000 pounds. Although the oil is produced very cheaply and very extensively in Italy, the Italian export embargo, together with the strong competition of the French and Spanish oils and the heavy influx of cottonseed oil into the European trade, has decreased Italy's exports of edible olive oil from nearly 25,000 tons in 1913 to 1,300 tons in 1920. As a high-grade salad oil, the Italian product can, of course, hold a certain place, but cottonseed and peanut oil have driven it out of the cheap cooking-oil market.

CORN OIL.

The trend of this excellent food oil is problematical. The table shows practically nothing as to the destination of the 6,000 or 8,000 tons exported from the United States. One striking fact, however, is that Argentina has begun to export this commodity. If Argentina can export corn oil, the Union of South Africa and Brazil may possibly develop the industry in competition with the United States.

CASTOR OIL.

Before the war British India produced practically all the exported castor beans, its output being 150,000 tons in 1913. The war brought, in 1918, a sudden strong demand for the oil, and Brazil, Central America, and even the southern part of the United States took up its culture on a large scale. The main feature of interest in the 1920 trade was the position of Brazil—nearly 7,000 tons ahead of India. In spite of the great impetus given by the war to castor-bean culture in India the 1919 export figure was only one-sixteenth as great as in 1913.

SOYA-BEAN OIL.

Unfortunately, accurate export figures for China's soya-bean crop are not available. It is estimated at between 8,000,000 and 9,000,000 piculs (or at least 1,000,000,000 pounds), of which Japan took one-half in 1920.

In 1920 the oil mills in North China turned out, with some assistance (10,000 tons) on the part of Japan, about 125,000 tons of oil. Yet at the same time the United States and Europe are shown to have several thousand tons more than this amount—a fact which may be explained by European reshipments.

This triple-purpose oil, though a comparatively new commodity, has acquired a very firm place in international commerce. Not only the soap industry but, to a very large extent, the food-oil and paint industries are concerned in all matters affecting the yield of this oriental oilseed. It appears that recent improvements in culture methods, and especially in the use of varieties which yield nearly double the amount of oil contained in the common varieties grown by the Manchurian peasants, may greatly expand this industry and possibly reduce the cost of the raw material. In fact, it is possible that within the coming decade the soya-bean culture may be extended into South Africa, Australia, Argentina, and Brazil. In the United States, in 1920, 190,000 acres were planted with this crop. The 200 or more distinct varieties afford a considerable range in adaptability to various soils and climates, and the variation in gross yield, oil content, etc., afford an excellent field for the hybridizer, as well as the agronomist.

MISCELLANEOUS OILSEEDS.

There are probably more kinds of potentially important oilseeds outside of those included in these tables. For instance, no accurate recent data are available concerning one of the world's best oilseeds—the mafurra of East Africa. This almost ideal oilseed is obtainable to the extent of thousands of tons, while both the high melting-point fat and the oils, which are readily obtained (even by crude methods of extraction), have a wide range of utility from edible tallows to soap materials. Several vegetable fats, having a melting point from 90° F. to 98° F., are already beginning to move from the tropical Orient to Europe. The principal kinds are Illipe, Mowra (or Mahrah), and Stillingia. A study of the individual characteristics of many of the food and industrial oils which have been in common usage among the native peoples of the Tropics would make for improvement in various branches of the oil industry in the United States and Europe; for, notwithstanding the obvious importance of new processes of hardening, refining, and even fractioning the common commercial vegetable oils, there must always be more or less pronounced differences among the economic oils, depending largely upon their sources and the methods of handling the raw materials.

FACTORS MAKING FOR PERMANENCY OF TRADE.

Although the trade in vegetable oils and materials has decreased since 1913, the decrease does not appear unduly large in the light of general conditions. The uses and advantages of these commodities indicate that they are on a permanent footing and will probably play a larger rôle in the world commerce of the future.

USES AND ADVANTAGES.

The industrial utilization of vegetable oils rests upon four basic functions: As foods, in soaps, in paints, and as lubricants. In the first two uses they compete with animal oils and in the latter with mineral oils. The edible vegetable oils appear to be gaining over the animal products, due to their natural advantages, especially that of cheaper production. Plants are more efficient sources of oil than animals, which must directly or indirectly consume vegetable

substances. As population increases, therefore, it becomes less profitable to feed primary plant substances to food animals, and vegetable oils replace animal oils and fats in the diet. The vegetable oils are considerably more flexible in their uses than animal oils. The many improvements in the extraction and purification of the vegetable oils, in deodorizing, bleaching, hardening, and blending, has given a great impetus to the whole industry during the last few years.

Vegetable oils are high in caloric content, containing on the average more than twice as many calories per pound as sugar, wheat flour, or cheese. This advantage is shared by animal fats and it is an important item from the standpoint of transportation. Although many organic compounds can now be synthetized in the laboratory, the "fixed" vegetable oils appear to be among the most difficult to produce artificially. It seems probable, therefore, that the world must depend almost entirely upon the oleiferous plant species for its supply of "fixed" oils for many years to come.

Moreover, the supply and range of vegetable oils and materials is more extensive than of the animal oils. There are a great number of oil-producing plant species, and they grow wherever plant life exists—in the valleys and highlands of the Temperate Zones, the well-watered Tropics, and the semidesert areas. There are to-day some 15 major vegetable oils and oil materials, from four continents, in our own import trade. The tropical countries of Asia, Africa, and the Western Hemisphere have increased production greatly in the last two decades. The presence of a great variety of oil-producing plants, a climate and soil suitable for their growth, and much vacant land, makes possible a much larger production in the future. There are many oil crops in these countries which may soon be utilized; some to increase and improve the food supply; others as soap, paint, and technical-trade oils. While a few important oil crops are grown in the south Temperate Zone, the north Temperate Zone, due principally to its large cottonseed crop, leads even the Tropics in production of vegetable oils. The great variety of oil-producing plants and their widespread distribution tend to stabilize the supply of vegetable oils, since unfavorable crop conditions are not likely to affect all of the producing countries at one time. Moreover, the supply is flexible and capable of rapid extension, especially in response to the stimulus of higher prices. The supply supplements and dovetails that of animal oils, each tending to compensate a shortage in the other. A drought in central Europe, for instance, would increase the demand for oil cake for cattle feed, while the attendant butter shortage would stimulate the copra and cottonseed trade, as well as the whole margarine industry.

The tables do not show the permanent status of vegetable oils and commodities in the world's commerce, but they show the volume of the materials in pre-war and post-war periods, the trend of the oil materials Europeward and the heavy trade in the oils, not only in manufacturing countries but also in several of the countries producing the raw materials. Although there was a considerable falling off in exports of raw material in the principal producing countries, this is probably a temporary setback, and it is expected that this trade will regain its prewar volume with the recovery of general commercial conditions.

TRADE STATISTICS.[a]

TABLE I.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY PRINCIPAL COUNTRIES.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	1,000 pounds.	*1,000 pounds.*	*1,000 pounds.*	*1,000 pounds.*	*1,000 pounds.*	*1,000 pounds.*
United Kingdom:						
Vegetable oils	466,993	573,801	510,391	327,296	324,421	354,787
Vegetable oil materials	[b]3,560,461	[b]3,825,292	[b]3,126,778	[b]102,808	[b]30,338	[b]87,609
United States:						
Vegetable oils[c]	293,028	850,649	623,994	294,498	368,803	278,188
Vegetable oil materials	464,997	1,155,039	1,793,963	48,171	22,627	15,519
Netherlands:						
Vegetable oils	182,971	320,275	265,695	128,685	164,854	268,850
Vegetable oil materials	1,520,092	633,538	611,865	715,014	3,631	62,071
Germany:						
Vegetable oils	148,022	[d]	338,438	172,466	[d]	2,325
Vegetable oil materials	3,852,293	[d]	727,258	29,926	[d]	892
France:						
Vegetable oils	100,305	274,659	210,558	127,426	16,726	69,746
Vegetable oil materials	2,257,920	1,202,349	1,455,616	51,934	7,073	23,329
Belgium:						
Vegetable oils	96,087	108,683	59,035	92,890	38,586	59,967
Vegetable oil materials	837,736	87,672	60,176	483,689	8,949	12,147
Italy:						
Vegetable oils	94,860	71,059	171,900	70,413	26,452	24,902
Vegetable oil materials	205,553	102,556	218,235	8,852	12,956	7,419
Denmark:						
Vegetable oils	34,394	24,201	15,715	24,172	16,081	42,400
Vegetable oil materials	249,430	346,185	402,280	40	.....	.....
Sweden:						
Vegetable oils	61,848	90,245	38,497	610	10,551	18,557
Vegetable oil materials	67,066	76,054	90,867	1,206	84	868
Norway:						
Vegetable oils	33,350	60,894	58,830	79	30	49
Vegetable oil materials	44,298	25,331	31,616	.....	.....	.....
Switzerland:						
Vegetable oils	50,419	50,592	37,366	183	3,160	7,139
Vegetable oil materials	10,301	33,131	43,756	200	1,262	5,105
Spain:						
Vegetable oils	3,348	4,571	9,553	66,632	252,057	120,612
Vegetable oil materials	156,192	54,474	47,990	11,827	9,314	5,058
Finland:						
Vegetable oils	9,381	11,350	4,943	.....	.....	.....
Vegetable oil materials	6,043	4,782	1,072	½	.....	.....
Greece:						
Vegetable oils	235	1,938	7,211	10,342	11,409	4,484
Vegetable oil materials	2,847	883	2,773	.....	291	67
Argentina:						
Vegetable oils	70,615	33,080	[e]17,266	.....	4,987	[e]2,418
Vegetable oil materials	7,987	285	[e]157	2,255,867	1,396,454	[e]1,318,384
Canada:[f]						
Vegetable oils	38,351	85,912	69,359	5,550	8,784	2,480
Vegetable oil materials	69,007	21,018	45,619	1,192,672	63,135	77,611
Brazil:						
Vegetable oils	24,933	9,166	18,818	28	8,796	9,435
Vegetable oil materials	.....	.....	.....	110,960	130,680	117,485
Chile:						
Vegetable oils	10,665	7,764	8,749	37	.....	.....
Vegetable oil materials	16,863	40,708	23,183	591	5,308	664
Peru:						
Vegetable oils	2,274	[g]21,236	[d]	253	3,761	[d]
Vegetable oil materials	2	.....	[d]	58,251	71,052	[d]
Venezuela:						
Vegetable oils	1,518	723	1,158	.....	267	58
Vegetable oil materials	1	1	5	[h]2,641	689	2,033
British India:						
Vegetable oils	4,761	1,718	5,079	29,189	62,607	27,915
Vegetable oil materials	12,442	64,598	23,820	3,513,854	1,944,448	1,383,157
Ceylon:						
Vegetable oils	1,351	459	647	61,263	75,712	56,843
Vegetable oil materials	9,037	4,559	3,520	125,216	198,418	152,398

For footnotes to this table see page 13.

TABLE I.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY PRINCIPAL COUNTRIES—Continued.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	1,000 pounds.	*1,000 pounds.*	*1,000 pounds.*	*1,000 pounds.*	*1,000 pounds.*	*1,000 pounds.*
Philippine Islands:						
Vegetable oils	2,824	2,567	3,227	11,046	308,823	171,370
Vegetable oil materials	2,533	60,647	4,428	184,141	55,630	57,919
Dutch East Indies: [i]						
Vegetable oils	26,681	9,117	[j] 5,551	3,386	177,780	[j] 128,487
Vegetable oil materials	121,164	27,755	[j] 70,829	603,870	819,568	[j] 183,783
China:						
Vegetable oils	14,322	8,410	7,462	175,554	610,365	432,241
Vegetable oil materials	51,507	30,939	38,293	638,415	839,890	649,321
Japan:						
Vegetable oils	9,084	6,528	3,951	13,544	56,481	57,770
Vegetable oil materials	326,270	683,016	756,305	13,068	43,166	25,471
Australia: [k]						
Vegetable oils	19,875	3,816	6,348	4,675	5,705	6,904
Vegetable oil materials	21,156	115,519	88,588	1,251	44,702	30,179
New Zealand:						
Vegetable oils	7,217	3,481	7,637	[d]	[d]	.....
Vegetable oil materials	488	352	25	2,393	3,450	2,484
Straits Settlements and Malay States: [l]						
Vegetable oils	24,163	12,070	15,144	26,291	21,892	18,253
Vegetable oil materials	245,120	184,575	128,246	220,985	303,065	296,212
Egypt and Sudan:						
Vegetable oils	18,552	13,884	12,911	4,920	878	3,761
Vegetable oil materials	22,240	21,743	27,872	994,220	631,439	549,139
Union of South Africa:						
Vegetable oils	20,313	6,603	9,049	.....	53	4
Vegetable oil materilas	2,608	9,732	16,217	15	1,693	1,784
Algeria:						
Vegetable oils	31,202	11,364	13,475	4,860	1,228	1,720
Vegetable oil materials	7,620	2,425	3,003	5,084	1,558	2,778
Aden:						
Vegetable oils	538	87	340	698	314	390
Vegetable oil materials	6,046	4,218	5,605	1,866	2,244	787

[a] Values have been omitted for obvious reasons. The conversions from volume units, such as gallons, liters, etc., to pounds are approximate.

[b] Includes domestic as well as foreign and colonial exports. Domestic oil exports amounted to 206,001,076 pounds in 1913, 253,309,653 pounds in 1919, and 264,228,160 pounds in 1920. The domestic oil materials exported amounted to 377,888 pounds in 1913, and 198,128 pounds in 1919. There were no exports of domestic oil materials in 1920.

[c] Does not include "all other expressed oils," which are shown in official statistics by value only. The value of these oils imported amounted to $411,922 in 1913, $2,558,259 in 1919, and $1,865,300 in 1920. During these three years the exports were valued at $417,834, $18,507,128, and $1,885,929, respectively.

[d] Statistics not available.

[e] Figures for first half year only.

[f] Figures are for fiscal years ended Mar. 31, 1914, 1920, and 1921.

[g] Value in Peruvian pounds. The Peruvian pound has the same value as the pound sterling.

[h] Includes whole coconuts.

[i] Does not include importations by the Government.

[j] Figures for Java and Madura only.

[k] Figures for fiscal years ended June 30, 1914, 1920, and 1921.

[l] Figures for 1913 are for the Straits Settlements only.

TABLE II.—GROSS EXPORTS OF VEGETABLE OIL MATERIALS FROM THE CHIEF PRODUCING COUNTRIES.

Countries.	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*
British India	3,513,854,000	1,944,447,000	1,383,157,000
Argentina	2,255,867,000	1,896,454,000	1,318,384,000
Egypt and British Sudan	994,220,000	631,439,000	549,139,000
China	638,414,000	839,890,000	649,320,000
Dutch East Indies	603,870,000	819,568,000	183,783,000
Philippine Islands	184,141,000	55,630,000	57,919,000
Ceylon	125,216,000	198,418,000	152,398,000
Brazil	110,960,000	130,680,000	117,485,000
Straits Settlements and Malay States	220,985,000	303,065,000	296,212,000
Total	8,647,527,000	6,819,591,000	4,707,797,000

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES.

COTTONSEED OIL.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
United States	11,406,831	27,805,784	9,457,924	264,778,781	193,133,201	184,753,824
United Kingdom	39,949,440	65,806,720	22,323,840	59,319,680	25,753,280	38,976,000
Italy	29,680,309	8,211,033	30,215,586	3,306	319,667	3,748
France	19,534,299	10,381,241	20,075,529	2,035,728	89,286	630,957
Netherlands	58,238,453	43,778,166	19,514,295	229,426	12,815,981	5,482,895
Norway	11,563,700	11,877,715	21,159,592	.....	.....	.....
Sweden	5,267,964	9,653,461	2,080,210	21,385	313,053	973,033
Belgium	15,036,415	3,346,722	3,108,517	7,605,341	2,369,667	1,192,525
Denmark	8,911,875	9,595,301	6,598,368	.....	.....	.....
Egypt and Sudan	971,009	138,438	348,649	4,642,087	443,603	3,138,103
Japan	.....	.....	.....	.....	3,056,548	3,804,814
Brazil	3,300,873	81,301	158,191	.....	4,918,313	7,594,862
China	.....	.....	.....	.....	25,724,667	12,046,267
Canada	27,293,099	54,087,104	40,267,927	.....	.....	.....
Australia	1,308,709	894,713	215,157	19,958	49,279	56,877
Argentina	13,041,058	1,504,856	[a] 1,236,525	.....	16,601	.....
Peru	.....	.....	.....	253,328	3,761,101	[b]
Union of South Africa	2,495,312	32,778	140,158	.....	.....	.....
Algeria	1,499,789	1,002,652	.....	57,761	.....	[b]
Venezuela	22,610	3,477	[b]	[b]	96,293	8,382

COTTON SEED.

United States	.....	.....	.....	24,606,185	1,918,848	5,270,382
United Kingdom	1,378,343,680	1,033,979,520	992,190,080	286,720	.....	.....
France	38,954,400	13,318,430	2,630,970	21,385	116,182	1,614,649
British India	.....	.....	.....	638,891,696	557,198,544	223,776,000
Egypt	.....	.....	.....	964,188,647	570,820,338	499,132,168
Sudan, Anglo-Egyptian	706,347	.....	.....	10,550,241	9,504,320	16,759,680
Japan	26,538,917	77,452,153	69,134,354	.....	.....	.....
Brazil	.....	.....	.....	109,743,654	49,931,549	51,948,573
China	.....	.....	.....	25,332,533	84,436,000	67,172,667
Argentina	.....	.....	.....	.....	2,654,718	3,285,293
Peru	.....	.....	.....	58,250,940	71,051,778	.....
Chile	15,054,332	39,025,157	20,603,764	524,759	829	101,191
Dutch East Indies	.....	.....	.....	1,768,531	.....	.....
Germany	484,564,246	[b]	1,149,919	[b]	[b]	[b]
Algeria	4,409	.....	.....	98,546	167,329	.....
Aden	999,824	743,792	892,864	48,244	3,696	9,072
Union of South Africa	.....	.....	.....	.....	11,200	555,999
Australia	1,100	1,575,000	900	5,300	200	30,900
Ceylon	3,727,024	2,299,584	2,182,432	.....	.....	.....
Venezuela	.....	.....	.....	912,482	294,083	1,680,020
Colombia	.....	.....	.....	[c] 312,414	[d] 1,360,040	.....

COCONUT OIL.

United States	72,195,622	281,063,213	216,327,103	.....	118,611,743	25,694,794
United Kingdom	139,988,816	170,849,280	148,124,480	21,668,864	23,310,896	12,875,520
Netherlands	36,784,856	139,315,784	114,170,002	11,851,374	59,954,214	128,555,912
France [e]	7,821,039	21,483,827	20,088,977	21,643,220	925,491	8,011,075
Italy	8,803,629	10,721,852	6,259,300	2,425	2,394,637	1,543
Belgium	8,452,207	38,533,923	22,527,467	2,413,133	6,648,714	14,270,449
Denmark	14,647,803	13,408,377	7,733,957	14,083,205	8,466,325	19,572,439
Sweden [e]	27,797,711	35,846,336	11,804,564	373,551	4,711,078	11,089,402
Norway	8,016,785	25,190,128	26,273,581	.....	.....	.....
Canada [f]	3,811,634	8,852,790	11,074,735	.....	.....	.....
Japan	1,085,636	476,773	936,018	.....	23,395,329	1,639,091
Philippine Islands	.....	.....	.....	11,045,992	308,517,482	171,013,919
Straits Settlements and Federated and Nonfederated Malay States	2,267,733	25,867	254,000	15,229,333	20,385,200	15,228,400
British India	273,250	254,190	2,160,918	9,825,913	42,493,245	16,618,836
Dutch East Indies	11,637,207	6,127,328	[b]	3,331,811	163,957,259	[g] 126,606,284

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

COCONUT OIL—Continued.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Ceylon	1,792	1,232	.....	61,262,208	75,711,888	56,843,024
Australia	16,060	481,600	1,776,320	4,427,920	5,156,480	5,577,600
Egypt	2,056,962	6,169,280	6,328,311	.....	.....	.....
Brazil	.....	.....	.....	.....	334,105	196,082
Argentina	471,238	301,084	.....	.....	.....	.....
Colombia	.....	*h* 26,583	.....	.....	*d* 36,477	.....
Nicaragua	.....	.....	.....	787,521	337,372	7,167
Venezuela	(*b*)	6,129	11,400	(*b*)	168,681	49,238
Union of South Africa	1,682,684	1,129,468	871,801	.....	.....	.....
Spain	2,299,612	1,476,059	4,234,739	.....	.....	.....
Algeria	528,002	93,255	(*b*)	41,887	.....	.....
Aden	65,609	47,533	203,728	13,846	10,173	14,784
Siam	4,283,191	2,865,081	3,210,714	.....	.....	.....
New Zealand	.....	136,433	475,012	225	.....	.....
Switzerland	4,829,179	6,515,916	4,025,379	5,732	1,821,220	4,913,172
Finland	1,366,215	4,068,477	4,636,684	.....	.....	.....

COPRA.

United States	30,351,463	258,915,789	215,188,461	.....	.....	.....
United Kingdom	69,144,320	160,229,440	128,497,600	37,327,360	7,940,800	36,370,880
Netherlands	221,859,650	166,636,344	195,467,076	181,561,548	63,065	21,865,320
France	248,325,703	113,457,755	168,236,553	688,276	247,136	208,114
Italy *i*	198,414	29,494,462	23,167,700	882	.....	.....
Belgium	43,104,392	5,081,162	5,833,998	15,338,202	862,682	1,649,389
Denmark	68,661,165	113,499,201	125,424,324	.....	.....	.....
Sweden	220	15,428,686	6,505,918	.....	.....	834,375
Norway	9,711,616	8,155,949	12,564,342	.....	.....	.....
Japan	5,639,486	37,604,758	10,547,474	(*b*)	(*b*)	(*b*)
Philippine Islands	.....	58,362,330	1,186,939	181,260,808	55,322,292	56,885,391
Straits Settlements and Federated and Nonfederated Malay States	214,462,399	134,788,000	98,537,733	206,132,533	259,008,799	273,854,400
Dutch East Indies	1,425,505	2,153,660	(*b*)	505,601,189	728,360,023	*g* 109,641,000
Ceylon	832,496	879,200	2,688	125,136,704	197,066,800	152,081,440
British India	36,624	58,053,072	18,502,400	85,549,184	23,836,288	6,128,640
Australia	13,128,640	68,985,280	67,663,680	1,159,200	44,696,960	30,098,880
Germany	433,419,510	(*b*)	213,611,190	1,450,186	.....	.....
Brazil	.....	.....	.....	.....	44,577	.....
Chile	744,053	481,527	1,321,678	.....	.....	.....
Venezuela	.....	.....	.....	.....	126,579	166,216
Union of South Africa	.....	3,746,972	5,751,501	.....	.....	.....
Aden	2,576	823,424	69,888	2,352	817,264	46,816
Siam	.....	.....	.....	68,000	1,036,713	116,133
New Zealand	488,320	342,720	24,640	1,335,040	.....	159,040
Canada	324	.....	.....	.....	.....	.....

LINSEED OIL.

United States	1,213,200	16,142,835	35,200,200	11,930,783	11,266,335	5,365,875
United Kingdom	26,629,120	2,186,240	3,669,120	68,974,080	167,816,320	108,928,960
Netherlands	1,214,975	2,631,990	2,137,320	56,102,357	38,170,215	59,238,673
France	4,671,768	45,096,636	24,710,920	5,783,327	2,321,223	3,813,076
Italy	985,236	8,337,136	9,219,637	22,707	3,039,262	24,912
Belgium	18,105,419	20,271,248	4,131,826	15,847,659	10,667,131	16,117,085
Sweden	792,688	6,948,070	1,147,549	3,554	325,591	74,504
Norway *j*	3,327,623	8,828,750	2,303,419	25,412	29,767	48,947
Switzerland	10,293,498	5,381,208	4,606,953	13,889	703,929	1,842,384
Finland	4,722,361	139,079	306,614	.....	.....	.....
Canada	293,512	4,836,108	5,955,926	.....	.....	.....
New Zealand	4,963,491	1,629,795	4,605,043	.....	368	.....
Australia	13,328,080	1,580,101	1,635,088	163,169	349,257	1,059,745
Union of South Africa	3,680,397	1,971,021	3,198,364	.....	.....	.....

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

LINSEED OIL—Continued.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Japan	582,225	372,466	148,637	.....	6,209,258	2,222,174
Philippine Islands	1,019,611	676,520	1,485,184	.....	.....	.....
Straits Settlements and Federated and Nonfederated Malay States	649,640	603,161	1,546,225	156,642	122,451	52,763
Dutch East Indies	3,104,586	2,667,206	5,550,600	67	311	(*b*)
British India	3,956,393	1,155,548	2,476,281	921,486	3,950,648	2,393,270
Ceylon	359,052	249,930	401,057	.....	.....	.....
Egypt	3,540,224	1,282,641	2,034,103	.....	.....	.....
Argentina	1,139,180	256,066	275,549	.....	4,512,851	2,231,071
Brazil	10,687,982	5,732,703	8,768,924	.....	.....	.....
Peru	1,003,369	(*b*)	(*b*)	(*b*)	(*b*)	(*b*)
Chile	4,034,980	1,268,864	3,112,278	.....	.....	.....
Venezuela	313,073	256,144	451,648	.....	.....	772
Algeria	1,517,647	766,319	.....	102,955	36,596	(*b*)
Greece	102,990	1,070,774	1,005,721	.....	.....	.....
Aden	43,968	24,532	92,176	5,518	1,305	9,072

LINSEED OR FLAXSEED.

United States	368,488,624	783,026,304	1,379,906,640	15,855,448	929,320	882,168
United Kingdom	1,512,983,389	1,277,554,488	872,204,480	13,356,885	8,055,208	3,068,800
Germany	1,235,519,348	.....	116,973,871	9,329,206	.....	735,234
Netherlands	630,592,404	212,510,748	210,480,913	190,386,652	6,235	2,648,933
France	523,386,149	224,083,260	71,928,602	2,284,407	1,259,929	3,778,023
Italy	100,152,112	29,065,005	48,776,775	100,971	4,409	6,834
Belgium	571,221,906	56,478,609	46,311,909	334,875,519	2,114,368	6,189,478
Denmark	43,594,642	39,694,705	59,023,976	1,102	.....	.....
Sweden	63,660,208	38,901,003	60,746,911	1,205,830	300	35
Norway	32,419,856	17,158,206	18,609,902	.....	.....	.....
Finland [k]	6,010,057	4,777,549	1,071,843	340	.....	.....
Canada	69,006,665	6,210,901	31,000,726	1,192,672,197	63,134,723	77,611,191
New Zealand	.....	9,100	.....	1,057,500	3,450,400	2,325,300
Australia	7,778,100	44,942,600	20,676,400	7,600	1,700	49,500
Japan	.....	19,253,750	6,331,897	.....	19,126,759	4,132,990
China	.....	.....	.....	.....	31,092,667	13,537,333
British India	.....	.....	.....	927,076,304	565,409,376	422,105,600
Egypt	.....	430,483	522,746	.....	239,580	35,119
Argentina	.....	.....	[a] 156,904	2,241,487,367	1,885,936,093	[a]1,307,263,867
Chile	451,149	868,683	906,756	6,217	4,720	324
Algeria	78,263	73,413	.....	1,313,501	1,284,841	676,812
Aden	1,428	446,208	4,368	51,072	735,616	896

PEANUT OIL.

United States	11,271,098	154,052,377	95,124,277	(*b*)	4,341,803	1,425,225
Netherlands	6,534,915	5,422,928	2,269,768	21,415,747	5,641,743	8,702,083
France	67,681	7,629,460	18,277,457	53,427,379	4,399,720	29,321,400
Italy	7,631,003	789,026	12,253,387	220	.....	53,351
Belgium	3,332,595	2,506,727	2,539,106	1,939,043	315,778	1,703,164
Denmark	4,471,811	1,089,293	998,684	79,145	.....	(*b*)
Sweden	3,123,601	2,243,529	1,859,410	.....	661	323,366
Norway [l]	7,314,620	11,780,666	6,672,674	.....	.....	.....
Japan	.....	.....	.....	.....	6,849,450	14,335,685
China	.....	.....	.....	34,209,733	163,223,067	110,169,600
Philippine Islands	1,381,169	1,309,559	1,537,512	.....	.....	.....
Straits Settlements and Federated and Non-Federated Malay States	20,169,600	10,748,533	12,806,533	10,499,600	1,189,067	2,850,800
Dutch East Indies	3,345,054	554,134	(*b*)	1,466	13,305,891	[g] 1,881,000
Egypt	.....	560,493	16,878	.....	.....	.....
Argentina	.....	.....	.....	.....	82,712	46,206
Spain	.....	.....	.....	18,435	1,633,102	172,567
Algeria	18,511,806	2,403,896	(*b*)	436,290	24,912	(*b*)

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

PEANUTS.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
United States:	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Shelled	11,064,364	24,179,687	110,810,316	7,709,639	19,778,490	9,366,434
Not shelled	12,884,035	5,667,354	8,703,119	.....	.....	.....
Netherlands	148,651,727	48,914,644	52,945,797	42,247,577	246,686	1,165,153
France:						
Shelled	524,152,468	181,622,885	389,061,635	4,833,585	670,639	1,110,237
Not shelled	563,744,880	318,444,329	478,506,225	37,476,877	1,132,944	4,041,693
Italy	[m] 54,616,099	7,135,408	31,044,516	[m] 34,833	[m] 106,703	[m] 597,447
Denmark	8,081,402	14,530,519	7,647,757	.....	.....	.....
Sweden	20,602	62,004	116,879	.....	.....	.....
Canada:						
Shelled	.....	9,219,053	7,889,860	.....	.....	.....
Not shelled	.....	5,587,693	6,628,197	.....	.....	.....
Union of South Africa	2,608,481	750,617	1,896,304	12,357	323,810	58,221
Japan	.....	24,931,043	43,483,366	13,068,465	14,470,515	11,832,436
China	44,568,267	23,969,867	26,159,467	152,678,533	173,635,686	169,086,000
Philippine Islands	2,532,814	2,284,204	3,241,364	.....	.....	.....
Straits Settlements and Federated and Non-Federated Malay States	25,286,400	21,763,200	17,573,067	11,811,733	3,528,000	3,994,800
Dutch East Indies:						
Shelled	253,059	245,831	(b)	13,995,820	19,459,578	[g] 19,127,000
Not shelled	77,639	104,480	(b)	30,407,452	18,597,666	21,442,000
British India	.....	.....	.....	622,511,680	363,293,952	232,993,600
Sudan, Anglo-Egyptian	.....	.....	.....	1,586,141	24,377,920	6,370,560
Egypt	5,253,293	627,253	1,508,345	1,227,603	5,708,748	3,445,155
Germany	216,238,852	.....	21,939,297	.....	.....	.....
Argentina	7,987,343	285,059	134	.....	2,519,913	3,285,293
Brazil	.....	.....	.....	77,084	450,047	1,975,123
Peru	1,907	.....	.....	.....	.....	.....
Chile	613,827	332,881	349,945	.....	.....	.....
Venezuela	981	992	5,291	.....	264,559	185,795
Spain	.....	.....	.....	11,827,260	9,314,316	5,057,743
Algeria	6,910,539	2,296,770	.....	258,159	41,887	85,979
Aden	183,904	399,168	235,088	78,932	249,760	65,856

SOYA-BEAN OIL.

United States	14,221,277	195,808,421	112,213,750	(b)	27,714,764	43,511,862
United Kingdom	(b)	66,489,920	40,322,240	21,033,600	18,451,680	30,128,000
France	416,008	8,474,042	17,999,898	.....	34,612	1,110,457
Netherlands	6,335,613	84,733,140	80,093,629	1,838,407	14,813,415	26,766,183
Denmark	441	(b)	(b)	8,553,407	7,615,129	22,827,531
Sweden	9,326,366	30,522,182	14,780,494	.....	3,177,162	4,704,641
Japan	6,249,177	3,692,646	1,557,418	1,879,583	3,862,297	20,751,359
China	.....	.....	.....	65,575,600	314,884,400	228,413,833
Egypt	(b)	393,920	176,156	(b)	(b)	(b)

SOYA BEANS.

United Kingdom	171,252,480	137,905,600	33,550,720	1,798,720	(b)	(b)
Germany	227,228,891	(b)	45,130,587	(b)	(b)	(b)
France	98,766	.....	661	20,503	27,778	2,866
Netherlands	60,746,203	72,161,770	8,279,285	31,794,719	.....	257,976
Denmark	105,972,476	126,463,352	170,779,559	.....	.....	.....
Sweden	287	19,575,415	21,708,491	.....	.....	.....
Japan	235,508,851	377,639,051	513,354,155	(b)	1,456,212	5,762,427
China	6,938,533	6,969,066	12,133,333	(b)	(b)	(b)
Dutch East Indies	117,814,911	20,644,179	70,829,000	10,212	1,900,019	(b)
Egypt	.....	.....	51,175	.....	.....	.....

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

PALM OIL.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
United States	54,071,864	41,817,945	41,948,224	.....	.....	.....
United Kingdom:						
Refined	6,521,760	9,565,472	880,320	1,785,504	1,511,216	9,831,360
Not refined	174,966,736	211,967,280	235,621,120	105,937,440	43,310,512	118,316,800
France	34,789,470	52,272,609	80,469,223	2,429,469	223,326	4,278,467
Netherlands	52,722,105	25,688,357	41,499,163	14,632,265	11,107,458	9,061,433
Belgium [n]	16,643,506	7,731,422	7,533,359	7,358,838	2,617,524	5,287,155
Denmark	28,880	.....	.....	23,810	.....	.....
Sweden	1,922,030	1,599,598	1,501,394	.....	220	23,865
Norway	174,340	.....	.....	.....	.....	.....
Canada [o]	711,537	60,886	112,431	.....	.....	.....
Union of South Africa [n]	8,372,079	33,597	639,089	.....	.....	.....
Dutch East Indies	495,627	(*b*)	(*b*)	(*b*)	(*b*)	(*b*)
Argentina	1,698,644	709,290	191,207	.....	.....	.....
Brazil	1,816,161	209,697	130,609	.....	.....	.....
Venezuela	2,970	8,360	9,647	.....	.....	.....
Algeria	18,960	57,099	(*b*)	(*b*)	(*b*)	(*b*)

PALM-KERNEL OIL.

United States	27,745,730	1,929,493	1,693,740	.....	.....	.....
Italy [p]	11,913,217	18,510,042	35,401,467	113,978	.....	441
Finland	1,166,086	291,649	[q] 4,636,684	.....	.....	.....
Colombia	.....	.....	.....	[h] 441	[d] 79,807	.....

PALM KERNELS.

United States	(*b*)	[s] 5,610,056	[s] 8,329,034	.....	.....	.....
United Kingdom	.....	681,914,240	641,211,200	.....	.....	.....
Germany	520,111,657	(*b*)	60,038,313	.....	(*b*)	.....
France [r]	6,583,377	117,943,454	103,244,725	27,558	2,508,394	11,243
Italy	242,286	5,411,632	642,420	.....	.....	.....
Netherlands	140,457,392	53,075,070	29,154,148	126,903,138	551	25,496,591
Belgium	9,401,903	23,321,077	2,887,100	1,741,380	5,844,090	3,757,608
Denmark	1,311,957	20,485,805	9,750,284	.....	.....	.....
Brazil [r]	.....	.....	.....	1,069,273	24,329,617	14,709,122

OLIVE OIL.

United States:						
Edible	38,844,067	67,681,020	30,591,082	.....	.....	.....
Not edible	4,228,568	2,118,405	496,117	.....	.....	.....
United Kingdom:						
Edible	13,959,195	8,562,015	5,658,240	2,530,005	554,513	1,182,720
Not edible	6,527,730	6,401,670	4,081,280	754,245	626,663	123,200
Belgium	4,448,263	5,810,237	1,228,943	940,509	2,447,419	293,395
Netherlands	200,735	833,487	36,764	277,028	396,403	36,162
Italy:						
Edible	4,600,118	15,175,585	2,630,970	49,251,425	2,407,644	2,724,004
Not edible	1,764	220	.....	19,572,880	16,464,614	20,650,268
France	31,926,797	121,605,075	20,385,936	13,027,292	5,388,704	4,532,658
Sweden	731,182	614,488	305,326	622	480,653	33,204
Denmark	179,455	.....	.....	.....	.....	.....
Greece	.....	106,976	812,896	8,557,020	11,135,946	3,915,819
Norway	2,408,415	2,351,122	2,227,135	.....	.....	.....
Switzerland:						
Edible	1,875,012	5,160,528	1,172,406	.....	.....	.....
Not edible	1,381,843	2,872,373	1,222,010	20,943	15,873	4,230
Finland	243,659	56,231	.....	.....	.....	.....
Canada	1,679,911	1,821,204	1,231,204	.....	.....	.....
New Zealand	56,247	21,578	87,395	.....	.....	.....
Australia	533,131	98,873	1,059,673	1,476	1,872	16,492
Japan	197,025	266,957	423,712	.....	.....	.....

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

OLIVE OIL—Continued.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Union of South Africa *t*	2,343,145	2,060,406	2,693,176	.....	1,404	4,015
Philippine Islands.	273,791	244,867	111,707	.....	.....	.....
Ceylon	13,783	11,603	39,818	.....	.....	.....
Dutch East Indies..	(*b*)	103,785	(*b*)	(*b*)	812	(*b*)
Egypt	4,083,034	1,968,556	1,591,201	.....	.....	.....
Sudan, Anglo-Egyptian	75,724	26,880	44,800	.....	.....	.....
Argentina	52,717,198	29,825,857	15,069,768	.....	.....	.....
Brazil	8,681,907	3,065,794	9,732,632	.....	.....	.....
Peru	776,500	(*b*)	(*b*)	(*b*)	(*b*)	(*b*)
Algeria	1,142,865	5,767,234	110,230	3,464,088	803,136	1,719,588
Spain	17,721	8,225	21,136	66,577,822	247,514,573	119,754,119
Persia	13,070	2,567	4,145	.....	.....	.....
Venezuela	1,142,124	444,992	675,487	.....	.....	.....

CASTOR OIL.

United States *u*	39,308	2,812,748	1,286,115	.....	.....	.....
United Kingdom	3,133,760	792,960	940,800	24,301,760	6,245,120	8,792,000
France *v*	459,659	2,949,534	1,589,517	7,177,296	1,162,045	6,275,394
Italy	41,887	6,451,762	2,203,498	1,169,540	1,251,992	964,953
Belgium	830,951	707,502	418,590	9,588,476	207,429	1,030,880
Denmark	163,581	(*b*)	(*b*)	(*b*)	(*b*)	(*b*)
Switzerland	105,600	165,036	106,703	.....	.....	.....
Canada	1,031,288	1,293,798	960,475	.....	.....	.....
New Zealand	1,258,968	148,050	578,089	.....	.....	.....
Australia	2,649,199	254,183	715,241	45,525	7,751	173,494
Union of South Africa	1,051,453	879,760	1,072,933	.....	405	234
Japan	970,095	1,718,936	885,598	.....	.....	.....
Philippine Islands .	149,067	336,085	92,172	.....	.....	.....
Siam	.....	24,883	1,863	.....	.....	.....
Straits Settlements and Malay States.	615,825	173,175	114,600	351,825	27,450	12,375
Dutch East Indies..	94,731	(*b*)	(*b*)	(*b*)	425,829	(*b*)
British India	.....	.....	.....	9,065,426	2,649,675	2,757,849
Ceylon	675,696	159,344	189,280	784	112	(*b*)
Egypt	.....	700,644	473,183	.....	.....	.....
Argentina	885,901	257,621	263,234	.....	.....	.....
Brazil	.....	.....	.....	.....	3,064,279	1,465,689
Chile	251,289	153,345	212,374	.....	.....	.....
Venezuela	.....	.....	.....	.....	1,532	.....
Algeria	83,334	54,013	(*b*)	.....	.....	.....
Aden	10,110	720	10,864	2,512	252	448

CASTOR BEANS.

United States	42,208,800	60,413,300	61,961,700	.....	.....	.....
United Kingdom	135,020,144	33,180,672	32,809,280	28,731,472	1,344,672	10,274,880
Italy	24,391,474	2,403,675	7,605,429	3,748	.....	.....
British India	.....	.....	.....	302,148,448	18,959,808	34,789,440
Dutch East Indies..	.....	.....	.....	3,966,216	2,683,415	2,308,000
Brazil	.....	.....	.....	69,888	52,419,616	48,458,124
Colombia	.....	.....	.....	*h* 22,050	*d* 178,478	(*b*)
Aden	.....	18,032	.....	728	18,032	29
Argentina	.....	.....	.....	.....	.....	89,467

MUSTARD SEED.

United States	.....	14,226,213	9,063,335	.....	.....	.....
Italy	77,822	.....	192,021	5,708,812	7,603,445	5,274,285
Netherlands	7,246,979	144,459	750,552	8,359,314	2,093,592	2,777,981
France	116,449,618	67,424,164	38,578,516	318,344	140,433	3,063,071
Germany	17,295,307	(*b*)	881,620	9,700	(*b*)	882

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

MUSTARD SEED—Continued.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Denmark	522,539	(b)	(b)	38,581	(b)	(b)
Sweden	252,021	637,176	186,732	.....	78,530	.....
Switzerland	412,481	.....	.....	.....	.....	.....
Australia	248,199	15,929	274,164	78,484	3,355	.....
British India	.....	.....	.....	11,433,520	6,429,472	3,064,320
Ceylon	788,256	449,792	629,216	.....	.....	.....
Aden	6,384	2,128	3,360	4,704	.....	1,624
Japan *j*	35,571,371	74,222,649	25,432,876	.....	8,112,196	3,743,322
RAPESEED OIL.						
United States	10,829,310	8,375,295	12,907,470	.....	.....	.....
United Kingdom	17,021,760	11,294,080	3,142,720	13,086,080	32,755,520	16,076,480
France	15,432	4,630	488,539	69,665	.....	4,850
Netherlands	4,832,927	14,656,275	2,343,152	3,352,771	9,676,424	7,863,266
Sweden	206,988	63,402	149,439	1,180	1,047,170	424,776
Norway *w*	482,587	866,051	193,601	.....	.....	.....
Finland	10,507	36,651	(b)	(b)	(b)	(b)
Union of South Africa *w*	318,100	59,380	76,421	.....	.....	.....
China	.....	.....	.....	.....	469,467	24,533
British India	.....	.....	.....	3,668,280	3,118,245	3,501,610
Argentina *w*	533,346	214,607	18,281	.....	.....	.....
COLZA OIL AND MUSTARD OIL.						
France	59,524	3,513,250	1,179,681	4,041,252	550,048	1,978,629
New Zealand	291,381	4,950	20,841	.....	.....	.....
Australia	1,054,757	430,927	730,725	5,816	98,117	64,016
Japan	.....	.....	.....	11,664,012	11,752,789	13,351,949
Egypt	.....	110,847	104,877	.....	.....	.....
Venezuela	30,789	862	.....	.....	.....	.....
Algeria	421,079	14,991	.....	.....	.....	.....
SESAME OIL.						
Netherlands	3,318,569	986,814	652,813	669,008	6,019,696	5,622,768
France	84,436	9,259	1,348,113	12,019,259	610,454	7,080,955
Denmark	3,567,484	107,584	383,600	332,013	.....	.....
Sweden	4,445,876	293,631	1,311,794	381	.....	14,991
Canada	19,580	10,371	11,730	.....	.....	.....
Japan	.....	.....	.....	.....	.....	1,664,885
China	.....	.....	.....	.....	5,034,000	497,067
Philippine Islands	.....	.....	.....	.....	.....	6,213
British India	.....	.....	.....	1,872,976	1,517,093	970,747
Ceylon	300,944	27,104	17,248	.....	.....	.....
Egypt *x*	.....	849	1,689	.....	170,244	419,090
Venezuela	6,171	.....	.....	.....	.....	93
Algeria	5,120,624	291,007	(b)	387,569	.....	(b)
Aden	408,394	10,002	22,848	675,774	302,022	365,344
Argentina	128,310	10,476	9,949	.....	.....	.....
HEMPSEED OIL.						
Denmark	.....	.....	.....	68,784	(b)	(b)
Norway	31,570	.....	.....	.....	.....	.....
Finland	83,938	.....	(b)	(b)	(b)	(b)

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

SUNFLOWER SEED.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Denmark	4,693,593	6,834	82,452	.....	.....	.....
Union of South Africa	.....	.....	.....	.....	1,339,236	1,154,123
Argentina	.....	.....	.....	.....	4,138,837	3,500,653

HEMPSEED.

Netherlands	7,337,162	194,593	1,321,880	1,805,087	42,302	318,117
France	30,032,164	4,582,922	3,648,172	1,567,250	76,059	251,765
Germany	21,720,160	(*b*)	134,481	5,485,706	(*b*)	1,323
Denmark	1,604,067	556,000	5,390,908	.....	.....	.....
Sweden	234,179	145,636	99,147	172	.....	.....
Japan	.....	12,874,236	21,147,063	.....	.....	.....
Algeria	108,246	12,125	.....	.....	.....	.....

SESAME SEED.

Italy	(*b*)	19,243,072	73,743,650	(*b*)	(*b*)	(*b*)
France	45,384,116	70,740,323	101,488,761	2,038,594	245,813	1,449,525
Germany	255,818,698	.....	55,089,647	.....	.....	.....
Denmark	8,857,201	30,183,179	23,706,505	.....	.....	.....
Japan	13,128,591	23,933,463	18,283,814	.....	.....	.....
Siam	.....	.....	.....	647,480	1,488,800	518,848
Philippine Islands	.....	.....	.....	264,693	307,449	1,034,065
British India	1,268,176	3,372,544	3,122,560	251,330,128	110,041,904	26,503,680
Ceylon	3,543,120	882,784	675,696	112	1,225,504	189,056
Straits Settlements and Malay States	4,852,933	4,858,267	3,881,467	2,113,467	1,648,000	517,200
China	.....	.....	.....	271,286,267	378,467,200	274,165,333
Dutch East Indies	265,081	153,956	(*b*)	4,380,108	6,485,089	*g* 2,665,000
Sudan, Anglo-Egyptian	(*b*)	(*b*)	(*b*)	15,082,242	16,054,080	19,956,160
Egypt	3,438,420	215,440	83,433	1,507,988	4,698,913	3,389,264
Venezuela	.....	.....	.....	.....	3,291	1,063
Greece	356,151	882,986	2,772,549	.....	.....	.....
Aden	4,805,584	1,781,696	4,362,288	1,657,600	387,184	561,904

TUNG OR CHINESE WOOD OIL.

United States	42,587,085	53,852,595	67,962,150	.....	.....	.....
Canada	(*b*)	2,856,965	3,531,859	.....	.....	.....
Australia	985,115	969,937	430,495	10,740	91,275	12,792
China	.....	.....	.....	(*b*)	81,794,000	72,095,467
Straits Settlements and Malay States	460,267	519,333	422,400	53,867	168,267	108,933

CANDLENUT OIL.

Philippine Islands	.....	.....	.....	.....	305,602	349,372

NIGER-SEED OIL.

France	.....	.....	220	9,039	.....	441

NIGER SEED.

France	4,120,835	.....	24,251	7,716	5,512	3,527
Siam	.....	.....	.....	20,900	(*b*)	(*b*)

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

COCOA BUTTER.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
United States	4,413,323	1,460	71,931	.....	7,320,255	5,377,188
United Kingdom	2,043,022	3,237,598	(b)	11,099	250,907	(b)
Netherlands	973,157	11,742	412,271	15,793,541	4,799,529	11,596,840
Belgium	2,634,806	2,186,181	3,016,292	65,840	56,746	18,197
France	201,280	863,983	955,694	9,921	281,968	214,728
Italy	919,980	1,328,933	1,502,214	.....	2,645	5,291
Germany	207,453	(b)	71,429	4,435,655	(b)	1,043,217
Switzerland	4,007,301	4,141,782	5,521,641	43,651	142,197	29,321
Canada	1,119,602	8,630,460	3,257,725	.....	.....	.....
New Zealand	646,929	913,202	1,149,949	.....	.....	.....
Union of South Africa	34,787	15,709	74,434	.....	.....	.....
Dutch East Indies	.....	.....	.....	(b)	3,197	(b)
Brazil	.....	.....	.....	18,100	55,794	51,025

CORN OIL.

United States	.....	.....	.....	17,788,647	6,414,904	12,059,479
France	112,435	107,364	657,191	.....	.....	441
Sweden	4,950,689	110,120	273,556	.....	15,232	1,900
Denmark	123,899	.....	.....	.....	.....	.....
Norway	30,335	.....	.....	.....	.....	.....
Argentina	.....	.....	.....	.....	183,090	141,158
Venezuela	.....	518	.....	.....	.....	.....

PERILLA OIL.

Japan	.....	.....	.....	(b)	1,355,631	(b)

POPPY-SEED OIL.

France	.....	.....	.....	1,406,094	9,259	1,406,094

POPPY SEED.

France	19,740,429	21,778,361	10,151,080	246,695	5,291	61,288
Germany	45,383,455	(b)	162,700	.....	(b)	.....
Denmark	216,933	.....	.....	.....	.....	.....
British India	.....	.....	.....	42,517,328	17,326,400	9,636,480
Ceylon	18,480	21,616	15,792	.....	.....	.....
Aden	.....	.....	.....	1,120	336	448

ILLIPE NUTS AND TANGKAWANG KERNELS.

France *y*	263,229	3,253,770	14,521,251	882	.....	.....
United States	104,160	(b)	(b)	.....	.....	.....
Belgium	708,512	(b)	(b)	.....	.....	.....
Straits Settlements and Malay States	517,867	23,165,867	8,254,133	927,067	38,879,867	17,845,600
Dutch East Indies	.....	.....	.....	28,576	18,986,778	.....

MOWRA OR ILLIPE SEED.

British India	.....	.....	.....	74,589,648	4,951,296	11,336,640

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

PERILLA SEED.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Japan	9,883,214	35,104,458	48,590,443	.....	.....	.....

TEA SEED.

British India	.....	.....	.....	878,864	96,320	98,560
Ceylon	127,792	26,208	14,112	22,064	23,296	19,376

RUBBER (HEVEA) SEED.

Ceylon	.....	.....	.....	57,344	25,648	19,376

TEA-SEED OIL.

China	.....	.....	.....	.....	7,596,800	3,285,067

RAPESEED.

Germany	338,244,944	.....	195,527,297	10,982,215	.....	35,053
United Kingdom	122,718,463	183,628,872	67,112,640	751,394	40,656	7,857,920
Netherlands	105,619,108	14,407,484	57,933,290	42,421,572	30,313	3,236,542
France [z]	2,776,915	92,593	1,427,037	250,883	17,637	581,353
Belgium [z]	213,895,819	2,227,058	5,088,104	131,679,779	127,505	541,126
Italy [z]	22,448,780	9,190,977	34,357,368	.....	.....	.....
China	.....	.....	.....	82,236,400	96,815,600	31,585,600
British India	.....	.....	.....	557,771,200	275,112,656	411,763,520
Argentina	.....	.....	.....	14,379,812	1,204,351	1,383,071

MISCELLANEOUS OIL SEEDS.[aa]

United Kingdom	170,909,005	316,899,352	359,201,920	20,555,472	12,956,790	30,036,160
Netherlands	197,581,089	65,492,998	55,532,438	89,534,291	1,148,695	4,306,938
France	133,896,161	65,607,132	72,166,479	2,151,690	610,233	7,176,855
Italy	2,293,445	117,285	272,929	2,829,384	5,116,877	1,458,563
Sweden	2,014,076	504,293	62,589	.....	551	11,294
Denmark	4,729,087	765,658	474,650	441	.....	.....
Switzerland	4,694,475	27,145,799	33,022,262	18,519	1,102	134,701
Greece	2,490,523	(*b*)	(*b*)	(*b*)	291,382	66,740
China	6,938,533	6,969,066	12,133,333	100,744,800	72,171,466	91,740,933
Union of South Africa	(*b*)	5,234,480	8,568,828	(*b*)	11,212	933
British India	11,137,392	3,172,624	2,195,200	1,155,504	1,791,664	960,960
Brazil	.....	.....	.....	.....	1,263,132	221,476
Aden	45,948	3,248,	36,960	20,944	32,368	100,016

MISCELLANEOUS OILS.[aa]

United Kingdom	45,651,200	16,647,680	45,626,560	7,893,780	3,734,080	9,555,840
Germany	8,689,431	(*b*)	(*b*)	37,097,906	(*b*)	(*b*)
France	145,283	268,079	690,260	4,347,030	729,723	1,751,555
Belgium	26,602,368	27,588,574	14,530,428	47,131,332	13,255,369	20,053,699
Italy	30,283,047	1,533,520	72,214,098	132,496	183,643	103,616
Switzerland	6,321,029	4,731,292	2,186,963	3,968	36,376	83,995
Greece	129,858	760,459	5,392,857	.....	.....	.....
Spain	1,030,816	3,087,395	5,297,160	35,576	2,909,181	685,741
Dutch East Indies	8,003,653	(*b*)	(*b*)	52,390	(*b*)	(*b*)

For footnotes to this table see page 24.

TABLE III.—TRADE IN VEGETABLE OILS AND OIL MATERIALS BY ARTICLES AND PRINCIPAL COUNTRIES—Continued.

MISCELLANEOUS OILS—Continued.

Countries.	Imports.			Exports.		
	1913	1919	1920	1913	1919	1920
	Pounds.	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*	*Pounds.*
Canada	2,390,911	1,657,567	1,871,824	5,550,079	8,784,236	2,479,792
Netherlands	(*b*)	2,216,423	2,565,568	2,523,080	1,459,289	5,966,117
China	.....	.....	.....	75,769,067	11,638,800	5,709,600
British India	741,024	307,988	2,141,811	3,835,185	8,878,545	1,672,709
Algeria	1,358,261	913,707	13,364,285	369,491	362,877	(*b*)
Egypt	7,412,328	2,421,403	1,683,071	(*b*)	119,943	5,860

a First half year only.
b Statistics not available.
c Year 1915.
d Year 1918.
e Includes other similar oils.
f Includes other palm oils, peanut, and soya bean oils.
g Statistics incomplete.
h Year 1916.
i Includes coconuts.
j Includes rapeseed.
k Includes hempseed.
l Includes castor oil.
m Includes sesame seed.
n Includes palm-kernel oil.
o Includes shea butter.
p Palm-nut oil.
q Includes some coconut and peanut oil.
r Palm nuts.
s Includes palm nuts.
t Includes salad oil.
u For domestic consumption.
v Includes curcas.
w Includes colza oil.
x Includes tahina.
y Includes mowra and carapa.
z Includes colza.
aa Includes oils and oil materials not shown by countries in the individual commodity tables. For example, miscellaneous oil materials imported into India include all oil materials imported, except sesame seeds and copra. The oils and materials included in the miscellaneous classification differ, therefore, for each country.

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